

CLAIMS

1. A method for the preparation of a suspension of carbon nanotubes, comprising
  - i) adding to a fluid medium a material comprising carbon nanotubes;
  - ii) adding to said fluid medium, prior to the addition of carbon nanotubes or thereafter, a block copolymer; and
  - iii) stirring said fluid medium; thereby to bring about de-agglomeration of the nanotubes into dispersed small bundles of nanotubes or essentially single tubes.
2. A method according to claim 1, wherein said fluid medium is a solvent selective toward at least two blocks of said block copolymer.
3. A method according to claim 1, wherein said small bundles comprise two or three carbon nanotubes.
4. A method according to claim 1, wherein said fluid medium is selected from the group consisting of water or aqueous solution, organic solvent, supercritical fluid, and their mixture.
5. A method according to claim 1, wherein said block copolymer comprises in its sequence at least two blocks that differ either in the chemical structure of their monomer units or in the sequence of said units within the block.
6. A method according to claim 1, wherein said block copolymer comprises two or three blocks that differ in the chemical structure of their monomer units.

7. A method according to any one of claims 1 to 6, wherein said block copolymer has structure A-B or A-B-A or A-B-C.
8. A method according to any one of claims 1 to 7, wherein said block copolymer comprises two or three blocks which have more than ten monomer units each.
9. A method according to claim 1, wherein said stirring comprises the sonication.
10. A method according to any one of claims 1 to 9, wherein said block copolymer is soluble in said fluid medium.
11. A method according to any one of claims 1 to 9, wherein said fluid medium dissolves selectively at least two different homopolymers, each having the same chemical composition as one of said different blocks forming said block copolymer.
12. A method for the preparation of a powder of de-agglomerated carbon nanotubes comprising
  - i) preparing a suspension of carbon nanotubes in a fluid medium comprising a block copolymer, and
  - ii) removing said fluid medium from said suspension.
13. A method according to claim 12, wherein said removing comprises filtration, centrifugation, evaporation, or lyophylization.
14. A method according to claim 1, wherein the sum of concentrations of said carbon nanotubes and said copolymer in the suspension is up to 60 wt%.

15. A method according to claim 1, wherein the mass ratio of said copolymer to carbon nanotubes ranges from 0.05 to 20.
16. A method according to claim 1, wherein said block copolymer comprises a polymer selected from the group consisting of polyoxyalkylenes, polystyrene, polyacrylate, polysiloxane, or their derivatives.
17. A method according to claim 1, wherein said fluid medium comprises water, alcohol, or alkane.
18. A suspension of carbon nanotubes, prepared according to any one of claims 1 to 17.
19. A powder of carbon nanotubes, comprising a block copolymer in admixture therewith.
20. The powder of claim 19, wherein said carbon nanotubes are substantially de-agglomerated.
21. Use of the carbon nanotubes of claims 18 or 19 for depositing carbon nanotubes onto a solid support in a required pattern.
22. Use of the carbon nanotubes of claim 18 or 19 for preparing a conductive plastic material.
23. Use of the carbon nanotubes of claim 18 or 19 as a reinforcing agent for polymeric matrices.
24. Use of the carbon nanotubes of claim 18 or 19 as an electric conductive connector between two electronic devices.

25. Use according to claim 24, wherein one of the devices, or both of them, are nanoelectronic devices.
26. Use of the carbon nanotubes of claim 18 or 19 in a technique that comprises the formation of a thin layer.
27. Use of the carbon nanotubes of claim 18 or 19 in a technique that comprises the formation of a thin wire.
28. Use of the carbon nanotubes of claim 18 or 19 in a printing technique.
29. Use of the carbon nanotubes of claim 18 or 19 in a coating technique.
30. An article comprising a polymeric material which comprises carbon nanotubes and a block copolymer.